IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:	Robert N. MAYO et al.	§	Confirmation No.:	7375
		§		
Serial No.:	10/629,033	§	Group Art Unit:	2195
		§		
Filed:	July 28, 2003	§	Examiner:	Eric C. Wai
		§		
For:	Priority Analysis of Access Transactions in an Information System	§	Docket No.:	200208396-1

APPEAL BRIEF

Mail Stop Appeal Brief – Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Date: August 11, 2008

Sir:

Appellants hereby submit this Appeal Brief in connection with the above-identified application. A Notice of Appeal was electronically filed on June 11, 2008.

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I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, L.P. (HPDC), a Texas Limited Partnership, having its principal place of business in Houston, Texas. HPDC is a wholly owned affiliate of Hewlett-Packard Company (HPC). The Assignment from the inventors to HPDC was recorded on December 8, 2003, at Reel/Frame 014180/0790.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals or interferences.

III. STATUS OF THE CLAIMS

Originally filed claims:	1-18.
Claim cancellations:	None.
Added claims:	None.
Presently pending claims:	1-18.
Presently appealed claims:	1-18.

The Examiner has provisionally rejected claims 1, 2, 4, 5, 10, 11, 13, and 14 in a double patenting rejection over claims 1-9, 15, 24 and 40 of copending application Serial No. 10/629,040. Appellants continue to request that this double patenting rejection be held in abeyance pending resolution of the issues in this appeal. If, as it is hoped, the Board reverses the Examiner, at that time Appellants will address the provisional double patenting rejection.

IV. STATUS OF THE AMENDMENTS

There were no amendments filed subsequent to the Final Office Action of April 29, 2008 (hereinafter "Office Action").

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

When operating a data center, it is sometimes desirable to reduce the power consumption of the information systems within the data center. This is desirable to reduce operating costs of the data center, and/or to reduce the overall heat in the data center environment. Specification of the subject application as filed (hereinafter "Specification"), p. 2, lines 1-10. The power consumption of an information system within a data center may be reduced by switching off individual access subsystems. Specification, p. 2, lines 13-15. However, switching off access subsystems can result in the loss of cached data, thus slowing down the overall response time in the information system. Specification, p. 2, lines 18-23. The analysis and assignment of incoming transactions to individual access subsystems may be used to minimize the loss of cached data during power reduction in an information system. Specification, p. 3, lines 1-9. Ranking the access subsystems within an information system, and routing an access transaction by matching the priority of the transaction to a ranking of an access subsystem is the subject of Appellants technological contribution.

In accordance with the invention of independent claim 1, for example, an information system is described that includes a set of access subsystems each for use in accessing a persistent store in the information system (Specification, p. 5, lines 12-17, and Fig. 1) and each having a corresponding priority rank (Specification, p. 6, lines 28-30). The priority rank determines the order in which certain system operations are performed, such as, for example, the order in which access subsystem are powered up or down, or placed in a reduced or full power state. Specification, p. 7, lines 6-27. The information system further includes a transaction analyzer (Specification, p. 5, lines 4-8, and Fig. 1) that determines a priority metric for an incoming access transaction to the persistent store (Fig. 2) and that transfers the incoming access transaction to one of the access subsystems by matching the priority metric to the priority ranks (Specification, p. 8, lines 4-9).

In accordance with the invention of independent claim 10, for example, a method for priority analysis of access transactions in an information system is described that includes determining a priority metric for an incoming access transaction to a persistent store in the information system (Specification, p. 8, lines 4-6, and Fig. 2). The method further includes selecting which of a set of access subsystems is to be used when performing the incoming access transaction by matching the priority metric to a priority rank for each access subsystem (Specification, p. 8, lines 7-9).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- Whether claims 1, 4-7, 10, and 13-16 are obvious over Ferguson (U.S. Pat. No. 5,504,894) under 35 U.S.C. § 103(a).
- Whether dependent claims 2-3 and 11-12 are obvious over Chase in view of Yu (U.S. Pat. No. 6,807,572) under 35 U.S.C. § 103(a).
- Whether dependent claims 8-9 and 17-18 are obvious over Chase in view of Stefanescu et al. (U.S. Pat. App. Pub. No. 2003/0013951) under 35 U.S.C. § 103(a).

VII. ARGUMENT

A. Overview of Chase

Chase is directed to a "method for enforcing a service discrimination policy in a storage system." Chase, Abstract. A service level agreement (SLA) is provided that specifies "a guaranteed level of responsiveness associated with particular content or services irrespective of any particular requester." Chase col. 1, lines 26-29. The method of Chase entails monitoring load metrics of physical resources required to access content. Then, "a particular one of the physical resources can be selected to service the request based upon a determination that the selected physical resource can service the request while satisfying the guaranteed service level at a load indicated by the monitored load metrics." Chase col. 2, lines 51-55. Thus, Chase is concerned with ensuring compliance with service level agreements. Chase has nothing to do with saving power.

B. Independent Claims 1, 4-7, 10, and 13-16

Claim 1 requires that each access subsystem has a corresponding priority rank. Further, per claim 1, a transaction analyzer determines a priority metric for an incoming access transaction and transfers the incoming access transaction to one of the access subsystems by matching the priority metric for the transaction to the priority ranks of the access subsystems.

Chase has no teaching of priority ranks for access subsystems, a fact confirmed by the Examiner. See Office Action page 5. Chase teaches that "higher priority requests can be routed to less loaded physical resources." Chase col. 5, lines 63-64. Chase is concerned with selecting whatever resources are available to service the request in compliance with the applicable SLA. See Chase col. 5, lines 53-56 ("the terms of the SLA...can be matched to the available physical resources"). These teachings have nothing to do with priority rankings of the underlying resources.

Appellants disagree with the Examiner who nonetheless believes claim 1 to be obvious over Chase. The invention of claim 1 addresses the problem of saving power. The claimed solution assigns priority ranks to the various access subsystems. Access requests with higher priority metrics are assigned to access subsystems having higher priority rankings—access subsystems with lower priority rankings are more likely to be powered off or transitioned to a lower power mode. Appellants' claimed solution solves the problem of assigning incoming access requests to access subsystems that may been, or are about to be, powered off to save power. Chase, by contrast, is only concerned with complying with service level agreements. Using Chase's teachings of selecting available physical resources in order to comply with applicable SLAs would not solve the problem addressed by Appellants, that is, how to assign incoming access requests to access subsystems in a system which implements power saving techniques by powering down various subsystems. Thus, faced with Appellants' problem, one of ordinary skill in the art most certainly would not have been motivated to seek out Chase's teachings. To assert otherwise, as the Examiner seems to have done, would be to use Appellants' teachings in hindsight, which is impermissible.

Appellants thus respectfully submit that for at least the reasons presented above, the Examiner erred in rejecting claim 1 as obvious over Chase. Further, none of the cited art, either alone or together, overcomes the deficiencies of Chase. For much the same reason, the Examiner erred in rejecting claims 4-7.

Claims 4 and 5 further limit the term "priority metric." In claim 4, the priority metric is "based on a dollar cost associated with the incoming access transaction," and in claim 5 the priority metric is based on a "computational complexity" associated with the transaction. The Examiner concluded that Chase does not disclose either of these types of priority metrics, but nevertheless still felt the claims were obvious. Appellants disagree. Per claim 4, the "transaction analyzer" determines, for a given access transaction, a priority metric that is based on a dollar cost. Chase teaches that each access

request has pre-assigned service level agreement. Thus, determining the "priority metric" for a Chase access request simply means reviewing the SLA already assigned to the access request; Chase does not teach a separate act of determining a priority metric. Chase does not at all teach determining a dollar cost priority metric of an SLA and imbuing Chase with such a teaching clearly divergent of the principle of operation of Chase and improperly uses the Appellants' own teachings in hindsight. The same analysis applies to claim 5 as well. For these additional reasons, the Examiner erred in rejecting claims 4 and 5.

Claims 6 and 7 depend on claim 5 and further limit the "computational complexity" introduced in claim 5. Again, the Examiner conceded that Chase lacks the claim limitations but nevertheless believes the claims to be obvious. The Examiner simply stated that "it is well known in the art that accessing a greater number of database tables or fields is a more computationally complex process." Office Action page 6. The Examiner's assertion is without support and Appellants believe that only renders the rejection to be defective. And, even if it is known that accessing a greater number of tables or fields is more computationally complex, the Examiner still has not established why it would have been obvious to determine a priority metric of a request based specifically on a computational complexity of the request being a number of database tables referenced by the request (claim 6) or a number of field matches to database tables (claim 7). Further, Appellants assert that the Examiner improperly used Appellants' teachings in hindsight.

Regarding the rejection of independent claim 10, Appellants respectfully note that independent claim 10 includes limitations similar to the limitations of claim 1 discussed above. Appellants thus respectfully submit that for at least the same reasons as those presented above with regard to independent claim 1, the Examiner erred in rejecting claim 10. The analysis above regarding claims 4-7 also applies to claims 13-16.

C. Dependent Claims 2-3 and 11-12

Regarding the rejection of dependent claims 2-3 and 11-12 as allegedly obvious over Chase in view of Yu, Appellants respectfully note that because these claims include all of the limitations of independent claim 1 and independent claim 10, respectively, and because none of the cited art, either alone or together, teaches or even suggest all of the limitations of claim 1 or claim 10 for at least the reasons presented above, dependent claims 2-3 and 11-12 are not rendered obvious over the cited art. Appellants therefore respectfully submit that the Examiner erred in rejecting dependent claims 2-3 and 11-12, and thus respectfully request reversal of the rejections of these claims.

D. Dependent Claims 8-9 and 17-18

Regarding the rejection of dependent claims 8-9 and 17-18 as allegedly obvious over Chase in view of Stefanescu, Appellants respectfully note that because these claims include all of the limitations of independent claim 1 and independent claim 10, respectively, and because none of the cited art, either alone or together, teaches or even suggest all of the limitations of claim 1 or claim 10 for at least the reasons presented above, dependent claims 8-9 and 17-18 are not rendered obvious over the cited art. Appellants therefore respectfully submit that the Examiner erred in rejecting dependent claims 8-9 and 17-18, and thus respectfully request reversal of the rejections of these claims.

E. Conclusion

For the reasons stated above, Appellants respectfully submit that the Examiner erred in rejecting claims 1-18 and that these claims are all in condition for allowance. Appellants thus respectfully request reversal of the rejections. It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of

claims) are hereby authorized to be charged to Hewlett-Packard Development Company's Deposit Account No. 08-2025.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

1. (Previously presented) An information system, comprising:

a set of access subsystems each for use in accessing a persistent store in the information system and each having a corresponding priority rank;

transaction analyzer that determines a priority metric for an incoming access transaction to the persistent store and that transfers the incoming access transaction to one of the access subsystems by matching the priority metric to the priority ranks.

2. (Previously presented) The information system of claim 1, wherein the priority metric is based on a frequency of occurrence for the incoming access transaction.

3. (Previously presented) The information system of claim 1, wherein the priority metric is based on a frequency of access of a database table referenced in the incoming access transaction.

4. (Previously presented) The information system of claim 1, wherein the priority metric is based on a dollar cost associated with the incoming access transaction.

5. (Previously presented) The information system of claim 1, wherein the priority metric is based on a computational complexity associated with performing the incoming access transaction.

6. (Original) The information system of claim 5, wherein the computational complexity is indicated by a number of database tables in the persistent store that are referenced by the incoming access transaction.

7. (Original) The information system of claim 5, wherein the computational complexity is indicated by a number of field matches specified in the incoming access transaction to database tables in the persistent store.

8. (Previously presented) The information system of claim 1, wherein the priority metric is based on a set of query constraints contained in the incoming access transaction.

9. (Original) The information system of claim 8, wherein the priority metric is based on a size of a database table in the persistent store to which the query constraints are to be applied.

10. (Previously presented) A method for priority analysis of access transactions in an information system, comprising:

determining a priority metric for an incoming access transaction to a persistent store in the information system;

selecting which of a set of access subsystems is to be used when performing the incoming access transaction by matching the priority metric to a priority rank for each access subsystem.

11. (Previously presented) The method of claim 10, wherein determining the priority metric includes determining a frequency of occurrence for the incoming access transaction.

12. (Previously presented) The method of claim 10, wherein determining the priority metric includes determining a frequency of access of a database table referenced in the incoming access transaction.

13. (Previously presented) The method of claim 10, wherein determining the priority metric includes determining a dollar cost associated with the incoming access transaction.

14. (Previously presented) The method of claim 10, wherein determining the priority metric includes determining a computational complexity associated with performing the incoming access transaction.

15. (Original) The method of claim 14, wherein the computational complexity is indicated by a number of database tables in the persistent store that are referenced by the incoming access transaction.

16. (Original) The method of claim 14, wherein the computational complexity is indicated by a number of field matches specified in the incoming access transaction to database tables in the persistent store.

17. (Previously presented) The method of claim 10, wherein determining the priority metric includes determining the priority metric in response to a set of query constraints contained in the incoming access transaction.

18. (Previously presented) The method of claim 17, wherein determining the priority metric includes determining a size of a database table in the persistent store to which the query constraints are to be applied.

IX. EVIDENCE APPENDIX

Not applicable in the present appeal.

X. RELATED PROCEEDINGS APPENDIX

Not applicable in the present appeal.